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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,404

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Tsuyoshi Kashima

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EXAMINER

BRANDT, CHRISTOPHER M

ART UNIT

PAPER NUMBER

2617

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,404	Applicant(s) KASHIMA, TSUYOSHI	
	Examiner CHRISTOPHER M. BRANDT	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-16 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Action is in response to applicant's amendment / arguments filed on January 23, 2009. **Claims 1-10, 13-16, and 18** are still currently pending in the present application. **This Action is made FINAL.**

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-10, 13-16, and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 2, and 15 recite a "hard handover in a non-cellular system." However, after a thorough review of applicant's specification, there is no mention of performing a hard handover, rather applicant simply states handing over. In addition, applicant does not disclose in the specification that the method is performed in a non-cellular system. The examiner draws applicant's attention to page 5 lines 18-23 of the present application, where it is disclosed that "The present invention is applicable also to a cellular system network or a PHS system network." Although, applicant has stated that "Applicant does not admit implicitly or explicitly that such amendment was necessitated by the prior art of record," such an amendment clearly changes the

scope of the claimed invention. If applicant believes that this amendment does not raise new matter issues, the applicant is encouraged to particularly point out in the specification using page and line numbers where the support for such amendment is found.

Claims 3-10, 13, 14, 16, and 18 are also rejected under 35 USC 112, second paragraph for their dependents on independent claims 1, 2, and 15.

Response to Arguments

Applicant's arguments filed January 23, 2009 have been fully considered but they are not persuasive.

With regard to applicant's argument that Chheda does not disclose a hard handover in a non-cellular system, the examiner agrees. However, after a thorough review of applicant's specification, there is no mention of performing a hard handover, rather applicant simply states handing over. In addition, applicant does not disclose in the specification that the method is performed in a non-cellular system. The examiner draws applicant's attention to page 5 lines 18-23 of the present application, where it is disclosed that "The present invention is applicable also to a cellular system network or a PHS system network." Chheda teaches that sectors are prioritized within the neighbor set of another sector in order of importance thereof with respect to that sector, where using the overlap technique, neighbors are include in the updated neighbor set first in order of the number of individual neighbor sets in which they are included (i.e. overlap) (column 8 lines 45-53, column 9 lines 33-39, column 10 lines 57-67). Chheda also discloses (as applicant has indicated) different sets, such as a "candidate set." It is noted that one of ordinary skill in the art, would read applicant's "candidate node" as a candidate node within a "candidate set." Therefore, the claimed invention appears to be a soft handover. As a result,

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Chheda does disclose “selecting, as a candidate node for next communication with the mobile node the specified node in the communication zone of which the largest number of nodes have been counted.” Moreover, Chheda teaches determining whether neighbors are active or candidate set members. A variable “A” is set equal to the number of individual neighbor sets in which neighbor X is included and a variable “B” is set equal to a combined rank calculated for neighbor X. It is noted that Chheda states that there are individual neighbor sets, or lists, a sector is on, the more important it is (i.e. overlapping) (column 8 lines 42-44, column 9 lines 6-7, 14-19). As a result, Chheda does in fact teach at a predetermined period at which the mobile station performs specifying, counting, and selecting.

With regard to applicant's argument that Chheda and Rohani does not disclose wherein the predetermined period is changed in accordance with a movement speed of the mobile node, the examiner respectfully disagrees. Rohani states that the mobile station's speed is taken into account in order to determine the frequency at which the Extended Hand-off Direction message is transmitted (column 5 lines 34-46). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Rohani teach wherein the predetermined period is changed in accordance with a movement speed of the mobile node.

With regard to applicant's argument that Chheda and Gross does not disclose the predetermined period is changed in accordance with an arrangement density of the specified nodes, the examiner respectfully disagrees. Gross states hand-offs based on subscriber density (column 6 line 60 - column 7 line 8). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Gross teach the predetermined period is changed in accordance with an arrangement density of the specified nodes.

With regard to applicant's argument that Chheda and Haas does not disclose wherein the specified nodes are mobile nodes, the examiner respectfully disagrees. Haas shows an ad-hoc network, which comprises of mobile nodes (column 4 lines 47-56). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Haas teach wherein the specified nodes are mobile nodes.

With regard to applicant's argument that Agrawala does not disclose numbers of nodes in the communication zones of the mobile node and its neighbor nodes are counted to determine a next node for communication, the examiner agrees. However, Agrawala was relied upon to show that the specified nodes are uniformly dispersedly arranged (figure 1, paragraph 31). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Agrawala teach the specified nodes are uniformly dispersedly arranged.

As a result, the claims are written such that they read upon the cited references.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1–6, and 16 are rejected under 35 USC 102(b) as being anticipated by **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)**.

Consider **claim 2 (and similarly applied to claims 1 and 15)**. Chheda discloses a method comprising:

specifying neighbor nodes present within a communication zone of a mobile node; specifying neighbor nodes for each specified neighbor node of the mobile node that are present within a communication zone for a corresponding one of the specified neighbor nodes of the mobile node (column 9 lines 6-7, read as determining whether neighbors are active or candidate set members);

counting the number of specified neighbor nodes that are within the communication of the corresponding one of the specified neighbor nodes of the mobile node (column 8 lines 42-44, column 9 lines 14-19, read as a variable “A” is set equal to the number of individual neighbor sets in which neighbor X is included and a variable “B” is set equal to a combined rank calculated for neighbor X. It is noted that Chheda states that there are individual neighbor sets, or lists, a sector is on, the more important it is (i.e. overlapping)); and

selecting, as a candidate node for next communication with the mobile node, the specified neighbor node of the mobile node having the largest number of specified neighbor nodes that are within its communication zone, wherein the method selects a node without using a received signal strength indicator (column 8 lines 45-53, column 9 lines 33-39, column 10 lines 57-67, read as sectors are prioritized within the neighbor set of another sector in order of importance thereof with respect to that sector, where using the overlap technique, neighbors are include in the updated neighbor set first in order of the number of individual neighbor sets in which they are included (i.e. overlap). In addition, Chheda states that a C/I can be used, however, no received signal strength indicator is discussed).

Consider **claim 3 and as applied to claim 1**. Chheda discloses wherein the selection is not performed if the specified node in the communication zone of which the largest number of nodes have been counted is the same as a node with which the mobile node is currently in communication (column 10 lines 49-52).

Consider **claim 4 and as applied to claim 3**. Chheda discloses wherein when there are a plurality of specified nodes in the communication zone of which the largest number has been counted, an arbitrary one node is selected (column 12 lines 49-64).

Consider **claim 5 and as applied to claim 1**. Chheda discloses wherein the mobile node performs said specifying, said counting, and said selecting at predetermined periods (column 7 lines 9-14, read as when a mobile unit wants to go into soft handoff).

Consider **claim 6 and as applied to claim 2**. Chheda discloses wherein the mobile node performs said specifying the neighbor nodes present within the communication zone of the mobile node, said specifying the neighbor nodes present within the communication zones of the neighbor nodes, said counting, and said selecting at predetermined periods (column 7 lines 9-14, read as when a mobile unit wants to go into soft handoff).

Consider **claim 16 and as applied to claim 15**. Chheda discloses wherein the apparatus is the mobile node which moves among a plurality of nodes (column 7 lines 10-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 7 is rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Rohani (US Patent 6,195,342 B1)**.

Consider **claim 7 and as applied to claim 5**. Chheda discloses the claimed invention but fails to explicitly teach wherein the predetermined period is changed in accordance with a movement speed of the mobile node.

However, Rohani teaches wherein the predetermined period is changed in accordance with a movement speed of the mobile node (column 5 lines 34-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Rohani into the invention of Chheda in order to use patterns of movement to predict the next location of the mobile station (column 5 lines 46-49).

Claim 8 is rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Gross et al. (US Patent 6,856,803 B1, hereinafter Gross)**.

Consider **claim 8 and as applied to claim 5**. Chheda discloses the claimed invention but fails to explicitly teach wherein the predetermined period is changed in accordance with an arrangement density of the specified nodes.

However, Gross teaches wherein the predetermined period is changed in accordance with an arrangement density of the specified nodes (column 6 line 60 – column 7 line 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Gross into the invention of Chheda in order to place high-density cells into high priority candidates which would therefore be cycled into the time insensitive handoff candidate list slots more frequently (column 6 lines 36-41).

Claims 9, 10, and 18 are rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Haas (US Patent 6,304,556 B1)**

Consider **claims 9, 10, and 18 and as applied to claims 1, 2, and 15, respectively**. Chheda discloses the claimed invention but fails to explicitly teach wherein the specified nodes are mobile nodes.

However, Haas teaches wherein the specified nodes are mobile nodes (figure 1, column 4 lines 47-56, read as ad-hoc network).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Haas into the invention of Chheda in order to allow efficient and fast route discovery in the ad-hoc network communication environment (column 4 lines 47-56).

Claims 13 and 14 are rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Agrawala et al. (US PG PUB 2005/0020275 A1, hereinafter Agrawala)**.

Consider **claims 13 and 14 and as applied to claims 1 and 2, respectively**. Chheda discloses the claimed invention but fails to explicitly teach wherein the specified nodes are uniformly dispersedly arranged.

However, Agrawala teaches wherein the specified nodes are uniformly dispersedly arranged (figure 1, paragraph 31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Agrawala in order to enable a wireless communication node to determine accurately and precisely the spatial location of neighboring communications nodes distributed in three-dimensional space (paragraph 26).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street

Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Brandt whose telephone number is (571) 270-1098.

The examiner can normally be reached on 7:30a.m. to 5p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Christopher M. Brandt

C.M.B./cmb

April 13, 2009

/George Eng/

Supervisory Patent Examiner, Art Unit 2617